

METHOD OF OPERATION  
TELEPHONE CIRCUIT

Arranged To Give Busy And Check Tone - Test When Zero Operator's Cord Requires -  
37 Ohms O.G.T. Sleeve - Arranged For Incoming Call Circuit - Special "A" Switch-  
board - Full Mechanical Power Driven System.

GENERAL DESCRIPTION

1. This circuit is used by an operator at a special A switchboard position, to communicate with subscribers and other operators. It is arranged to produce a click in the receiver when the plug of a calling cord is touched to the sleeve of a jack of a busy line. It is also arranged to receive a dial tone, when used in completing calls to mechanical offices.

2. When completing a toll call, it is necessary to verify the number of the calling station. To accomplish this a checking multiple is provided in which appear a sleeve multiple of all the subscribers lines in the office. The operator inserts the plug of the answering cord in the trunk to which the calling subscriber is connected and requests the calling subscriber's number. The operator then tests the sleeve multiple of the line given by the subscriber with the tip of the calling cord. If the subscriber has given the correct number, the operator receives a distinctive tone; if the number is wrong, and the line tested is busy, the usual busy signal is heard.

3. When the position is vacant, or when a cord circuit talking key is operated, the incoming call circuit is disconnected from the telephone set. Should a distant operator connect to the incoming call circuit at this time, a tone is connected to it, notifying the distant operator that the operator is busy or the position is vacant.

4. This circuit may be used with a transfer key which transfers the incoming call circuit to the adjacent position.

DETAILED DESCRIPTION

OPERATION

5. The telephone circuit is normally disconnected from the cord circuit. When a talking key in a cord circuit is operated, ground is connected to leads CO which operates the T relay. The operation of the T relay connects the tip and ring of the telephone circuit to the cord connects ground to lead A, which operates a relay disconnecting the incoming call circuit from the telephone circuit and opens the dial tone circuit. To make a busy test, the tip of the plug of the calling cord is touched to the jack of an outgoing trunk. If the trunk is busy, a circuit is closed from battery on the sleeve of the cord already in some multiple jack, over the tip of the cord with which the test is being made through the contact of the relay in the cord circuit, lead BT, through the winding of the CT, and BT relays to ground, operating both relays. The operation of the CT relay performs no useful function at this time. The operation of the BT relay closes a circuit from battery through the 46-B or 47-B retardation coil, contact of the BT relay, to ground through the 40 ohm winding



of the 20-A repeating coil, which induces a current in the 277 ohm winding of the repeating coil, producing a click in the receiver. When the tip of the plug of the calling cord is removed from the sleeve of the jack, the BT relay releases, opening the circuit through the 40 ohm winding of the 20-A repeating coil, and inducing another current in the 277 ohm winding of the repeating coil, which produces another click in the receiver.

6. When the plug of the answering cord is inserted in the jack of a trunk in answer to a call and the subscriber desires a toll connection it is necessary to make a test to verify the number of the calling party. The tip of the plug of the calling cord is touched to the sleeve of the calling line which appears in the checking multiple. Battery from a relay in the district circuit operates the BT and CT relays. The operation of the CT relay closes a tone circuit over lead CT through the sleeve of the answering cord to the sleeve of the trunk jack, district circuit, line circuit, through the tip of the checking multiple calling cord, contact of the relay in the cord circuit, lead BT, 2 m.f. condensers contact of the BT relay to ground through the 40 ohm winding of the 20-A repeating coil. Should the calling subscriber give the wrong number, the tone will not be heard in the receiver, since the calling cord will not be connected to the checking multiple terminal associated with the calling line.

7. When a call to a mechanical office is completed by means of a dial, the dial key in the cord circuit is first operated and the dial tone is connected to the lead DT, through the back contact of the T relay, to the 40 ohm winding of the 20-A repeating coil as an indication that the apparatus is ready to receive the impulses from the dial.

8. When the plug of the telephone set is inserted in the jacks the P relay operates; when the plug is withdrawn from the jacks, the P relay releases connecting ground to lead A.

CIRCUIT REQUIREMENTS

	<u>OPERATE</u>	<u>NON-OPERATE</u>	<u>RELEASE</u>
B122 (CT)	Test .0032 amp. Readj. .003 amp.		Test .0005 amp. Readj. .001 amp.
B157 (BT)	Test .0016 amp. Readj. .0015 amp.		Test .0002 amp. Readj. .0003 amp.
E503 (T)	Test .019 amp. Readj. .017 amp.	Test .0095 amp. Readj. .010 amp.	
H1 (P)	Test .054 amp. Readj. .014 amp.	Test .0095 amp. Readj. .010 amp.	

ENG. ---HTW-JO.  
3/24/22.

CHK D. ---CHW.

APPROVED - C.L. STUYTER, G.M.L.



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